

Appl. No. 10/063,822
Amdt. Dated January 21, 2005
Reply to Office action of October 21, 2004

REMARKS**1. Specification Amendments:**

5 The original final sentence of paragraph [0014] of the
disclosure was mistranslated. Therefore, paragraph
[0014] is amended for correction. No new matter is
entered since the subject matter of the corrected
sentence is fully supported by that of the original
10 sentence.

The applicant respectfully requests that this amendment
be entered.

15 2. Claim Amendments:

The applicant considers the combination of an oxide
transparent electrode over a GaN-based semiconductor
reverse-tunneling layer to have novelty and to be
20 unobvious over the prior art.

Accordingly, claims 1, 10-12, and 14 are amended to
include these limitations. Such amendments are supported
by the original claims and by the disclosure as a whole,
25 and specifically in paragraph [0011]. No new matter is
entered. In addition, since these limitations are fully
encompassed by the original disclosure, they should not
require a new search or additional consideration. Claims
3 and 7 are amended accordingly.

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Claims 15-17 are introduced to recite the invention in different terms, as supported by the disclosure as a whole and specifically by paragraph [0014]. No new matter
5 is entered.

Claims 16 and 17 correspond to claims 6 and 7, respectively. Claim 15 differs from claim 5 in "n-type" limitations in the following:

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"an n-type contact layer positioned on the buffer layer, the contact layer comprising a first surface and a second surface;

an n-type cladding layer positioned on the
15 first surface of the n-type contact layer;"

Claims 15-17. should be found allowable for reasons similar to the allowance of claims 5-7.

20 Consideration of the amended claims 1, 10-12, and 14 and the new claims 15-17 is respectfully requested. Dependent claims should be allowed if the corresponding independent claim is allowed.

25 **3. Rejection of claims 1, 3, 14 under 35 U.S.C. 102(b) as being anticipated by Ming-Jiunn et al. (US 6,078,064) :**

Ming-Jiunn does not teach or suggest that the layers 12 and 12A are reverse tunneling layers. Rather, Ming-Jiunn
30 teaches that the layer 12 (col. 1, lines 41-42) and by

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consequence the layer 12A (col. 2, lines 50-53) are p-type layers.

- 5 Consequently, reverse tunneling will not occur between Ming-Jiunn's layers 12 and 12A because both of the layers 12 and 12A are p-type.

- 10 In contrast, independent claims 1 and 14 each recite a reverse-tunneling layer. One way to realize reverse tunneling is by providing an n+-type layer such as the n+-type reverse-tunneling layer 20 disclosed throughout the applicant's specification.

- 15 Therefore, the applicant asserts that the reverse-tunneling layer limitations recited in claims 1 and 14 are not taught or suggested by Ming-Jiunn.

- 20 Withdrawal of this rejection is respectfully requested in view of the above and in view of the amendments made to claims 1 and 14. Claim 3 is dependent on claim 1 and should be allowed if claim 1 is found allowable.

- 25 **4. Rejection of claims 10-11 under 35 U.S.C. 102(b) as being anticipated by Saito et al. (US 6,121,634):**

Claim 10 is amended to include the limitation of the reverse-tunneling layer.

- 30 Saito, in col. 12, lines 35-40, teaches that a layer in

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a comparable physical position, namely the layer 406,
is Mg doped and is therefore not n-type and consequently
not a reverse-tunneling layer. Thus, the applicant
5 asserts that Saito does not teach or suggest the
reverse-tunneling layer limitation recited in claim 10.

Withdrawal of this rejection is respectfully requested
in view of the above and in view of the amendments made
10 to claims 10 and 11. Claim 11 is dependent on claim 10
and should be allowed if claim 10 is found allowable.

**5. Rejection of claim 2 under 35 U.S.C. 103(a) as being
unpatentable over Ming-Jiunn as applied to claim 1, and
15 further in view of Saito:**

Claim 2 is dependent on the amended claim 1 and should
be allowed if the amended claim 1 is found allowable.

20 **6. Rejection of claim 12 under 35 U.S.C. 102(b) as being
anticipated by Ming-Jiunn; or in the alternative, under
35 U.S.C. 103(a):**

Claim 12 includes the limitation of the
25 reverse-tunneling layer.

In Item 3 above, the applicant asserts that Ming-Jiunn
does not teach or suggest a reverse-tunneling layer.

30 Withdrawal of this rejection is respectfully requested

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in view of arguments made in Item 3 above, and in view
of the amendments made to claim 12.

- 5 **7. Rejection of claim 13 under 35 U.S.C. 103(a) as being
unpatentable over Ming-Jiunn as applied to claim 12:**

Claim 12 is dependent on the amended claim 12 and should
be allowed if the amended claim 12 is found allowable.

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Sincerely yours,

15 Winston Hsu Date: January 21, 2005

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to me. The time difference between D.C. and Taiwan is 13 hours.
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25 earlier) - 11 AM, D.C. time.